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## Note by the President of the Security Council

At its 7488th meeting, held on 20 July 2015 in connection with the item entitled "Non-proliferation", the Security Council adopted resolution 2231 (2015).

In paragraph 4 of the resolution, the Security Council requested the Director General of the International Atomic Energy Agency to provide regular updates to the Council on the implementation by the Islamic Republic of Iran of its commitments under the Joint Comprehensive Plan of Action and to report at any time any issue of concern directly affecting the fulfilment of those commitments.

Accordingly, the President herewith circulates the report of the Director General dated 9 November 2016 (see annex).

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## Annex

### Letter dated 9 November 2016 from the Director General of the International Atomic Energy Agency addressed to the President of the Security Council

I have the honour to enclose herewith the document submitted to the Board of Governors of the International Atomic Energy Agency (see enclosure).

I should be grateful if you would bring the present letter and the enclosed document to the attention of all members of the Security Council.

(*Signed*) Yukiya **Amano**

## Enclosure

[Original: Arabic, Chinese, English, French, Russian and Spanish]

# Verification and monitoring in the Islamic Republic of Iran in light of United Nations Security Council resolution 2231* (2015)

## Report by the Director General

## A. Introduction

1. This report of the Director General to the Board of Governors and, in parallel, to the United Nations Security Council (Security Council), is on the Islamic Republic of Iran's (Iran's) implementation of its nuclear-related commitments under the Joint Comprehensive Plan of Action (JCPOA) and on matters related to verification and monitoring in Iran in light of Security Council resolution 2231 (2015). It also provides information on financial matters, and the Agency's consultations and exchanges of information with the Joint Commission, established by the JCPOA.

## B. Background

2. On 14 July 2015, China, France, Germany, the Russian Federation, the United Kingdom, the United States of America, with the High Representative of the European Union for Foreign Affairs and Security Policy (E3/EU+3) and Iran agreed on the JCPOA. On 20 July 2015, the Security Council adopted resolution 2231 (2015), in which, inter alia, it requested the Director General to "undertake the necessary verification and monitoring of Iran's nuclear-related commitments for the full duration of those commitments under the JCPOA".[1] In August 2015, the Board of Governors authorized the Director General to implement the necessary verification and monitoring of Iran's nuclear-related commitments as set out in the JCPOA, and report accordingly, for the full duration of those commitments in light of Security Council resolution 2231 (2015), subject to the availability of funds and consistent with the Agency's standard safeguards practices. The Board of Governors also authorized the Agency to consult and exchange information with the Joint Commission, as set out in GOV/2015/53 and Corr. 1.

3. The estimated annual cost to the Agency for the implementation of Iran's Additional Protocol and for verifying and monitoring Iran's nuclear-related commitments as set out in the JCPOA is €9.2 million per annum, all of which is provided from extrabudgetary funds in 2016. As of 1 November 2016, the total amount that has been made available to the Agency for the implementation of the Additional Protocol and for verification and monitoring in relation to the JCPOA

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* Circulated to the Board of Governors of the International Atomic Energy Agency under the symbol GOV/2016/53.

[1] The actions requested of the Director General by the Security Council as contained in resolution 2231 (2015) are set out in GOV/2015/53 and Corr. 1, para. 8.

was €11.0 million, including the unspent balance of the funds for Joint Plan of Action (JPA) activities.

## C. JCPOA Verification and Monitoring Activities

4. Since 16 January 2016 (JCPOA Implementation Day), the Agency has verified and monitored Iran's implementation of its nuclear-related commitments under the JCPOA,[2,3] and reports the following for the period since the issuance of the Director General's previous quarterly report.[4]

### C.1. Activities Related to Heavy Water and Reprocessing

5. Iran has not pursued the construction of the existing Arak heavy water research reactor (IR-40 Reactor) based on its original design.[5] Iran has not produced or tested natural uranium pellets, fuel pins or fuel assemblies specifically designed for the support of the IR-40 Reactor as originally designed, and all existing natural uranium pellets and fuel assemblies have remained in storage under continuous Agency monitoring (paras. 3 and 10).[6]

6. Iran has continued to inform the Agency about the inventory of heavy water in Iran and the production of heavy water at the Heavy Water Production Plant (HWPP)[7] and allowed the Agency to monitor the quantities of Iran's heavy water stocks and the amount of heavy water produced at the HWPP (para. 15). On 25 October 2016, the Agency verified that Iran's stock of heavy water had reached 130.0 metric tonnes (para. 14).[8] On 2 November 2016, the Director General expressed concerns related to Iran's stock of heavy water to the Vice President of Iran and President of the Atomic Energy Organization of Iran, HE Ali Akbar Salehi. On 8 November 2016, the Agency verified that Iran's stock of heavy water had reached 130.1 metric tonnes. In a letter received by the Agency on 9 November 2016, Iran informed the Agency of "Iran's plan to make preparation for transfer of 5 metric tons of its nuclear grade heavy water" out of Iran.[9]

7. Iran has not carried out activities related to reprocessing at the Tehran Research Reactor (TRR) and the Molybdenum, Iodine and Xenon Radioisotope Production (MIX) Facility or at any of the other facilities it has declared to the Agency (para. 18).

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[2] GOV/INF/2016/8, para. 6.
[3] Note by the Secretariat, 2016/Note 5.
[4] GOV/2016/46.
[5] The calandria was removed from the reactor and rendered inoperable during preparation for Implementation Day and has been retained in Iran (GOV/INF/2016/1, Arak heavy water research reactor, paras 3(ii) and 3(iii)).
[6] The paragraph references in parentheses throughout Sections C and D of this report correspond to the paragraphs of 'Annex I — Nuclear-related measures' of the JCPOA.
[7] HWPP is a facility for the production of heavy water with a nominal design capacity of 16 tonnes of nuclear-grade heavy water per year.
[8] Iran's stock includes nuclear-grade heavy water and its equivalent in different enrichments.
[9] The quantity of heavy water to be transferred out of Iran will be verified by the Agency.

## C.2. Activities Related to Enrichment and Fuel

8. At the Fuel Enrichment Plant (FEP) at Natanz, no more than 5060 IR-1 centrifuges have remained installed in 30 cascades in their configurations in the operating units at the time the JCPOA was agreed (para. 27). Iran has withdrawn 48 IR-1 centrifuges from those held in storage[10] for the replacement of damaged or failed IR-1 centrifuges installed at FEP (para. 29.1).

9. Iran has continued the enrichment of $UF_6$ at FEP.[11] Iran has not enriched uranium above 3.67% U-235 (para. 28).

10. Technical discussions between the Agency and Iran relating to the quantity of enriched uranium in the process lines at the Enriched $UO_2$ Powder Plant (EUPP) at Esfahan remain ongoing.[12]

11. Iran's total enriched uranium stockpile did not exceed 300 kg of $UF_6$ enriched up to 3.67% U-235 (or the equivalent in different chemical forms) (para. 56).[13]

12. At the Fordow Fuel Enrichment Plant (FFEP), 1044 IR-1 centrifuges have been maintained in one wing of the facility (para. 46), of which 1042 IR-1 centrifuges have remained installed in six cascades and two IR-1 centrifuges have remained installed separately for the purpose of conducting "initial research and R&D activities related to stable isotope production".[14] Throughout the reporting period, Iran has not conducted any uranium enrichment or related research and development (R&D) activities, and there has not been any nuclear material at the plant (para. 45).

13. All centrifuges and associated infrastructure in storage have remained under continuous Agency monitoring (paras. 29, 47, 48 and 70).[15] The Agency has continued to have regular access to relevant buildings at Natanz, including all of FEP and the Pilot Fuel Enrichment Plant (PFEP), and performed daily access upon Agency request (para. 71).

14. Iran has conducted its enrichment activities in line with its long-term enrichment and R&D enrichment plan, as provided to the Agency on 16 January 2016 (para. 52).

15. Iran has not operated any of its declared facilities for the purpose of reconverting fuel plates or scrap into $UF_6$, nor has it informed the Agency that it has built any new facilities for such a purpose (para. 58).

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[10] See para. 13 of this report.

[11] Under the JCPOA, "[f]or 15 years the Natanz enrichment site will be the sole location for all of Iran's uranium enrichment related activities including safeguarded R&D" (para. 72).

[12] GOV/2016/46, para. 10.

[13] 300 kg of $UF_6$ enriched up to 3.67% contains 202.8 kg of uranium, considering the standard atomic weight of uranium and fluorine.

[14] GOV/2016/46, para. 12.

[15] GOV/2016/46, footnote 15.

### C.3. Centrifuge Research & Development, Manufacturing and Inventory

16. No enriched uranium has been accumulated through enrichment R&D activities, and Iran's enrichment R&D with and without uranium has been conducted using centrifuges within the limits defined in the JCPOA (paras. 32-42).

17. Iran has provided declarations to the Agency of its production and inventory of centrifuge rotor tubes and bellows and permitted the Agency to verify the items in the inventory (para. 80.1). The Agency has conducted continuous monitoring, including through the use of containment and surveillance measures, and verified that the declared equipment has been used for the production of rotor tubes and bellows to manufacture centrifuges only for the activities specified in the JCPOA (para. 80.2). Iran has not produced any IR-1 centrifuges to replace those that have been damaged or failed (para. 62).

18. All declared rotor tubes bellows and rotor assemblies have been under continuous monitoring by the Agency, including those rotor tubes and bellows manufactured since Implementation Day (para. 70). Iran has manufactured rotor tubes during the reporting period.[16]

## D. Transparency Measures

19. Iran has continued to permit the Agency to use online enrichment monitors and electronic seals which communicate their status within nuclear sites to Agency inspectors, and to facilitate the automated collection of Agency measurement recordings registered by installed measurement devices (para. 67.1). Iran has issued long-term visas to Agency inspectors designated for Iran as requested by the Agency and provided proper working space for the Agency at nuclear sites and facilitated the use of working space at locations near nuclear sites in Iran (para. 67.2).

20. Iran has continued to permit the Agency to monitor — through measures agreed with Iran, including containment and surveillance measures — all uranium ore concentrate (UOC) produced in Iran or obtained from any other source, and reported by Iran to the Agency. Iran also provided the Agency with all information necessary to enable the Agency to verify the production of UOC and the inventory of UOC produced in Iran or obtained from any other source (para. 69).

## E. Other Relevant Information

21. Iran continues to provisionally apply the Additional Protocol to its Safeguards Agreement in accordance with Article 17(b) of the Additional Protocol, pending its entry into force. The Agency has continued to evaluate the declarations submitted by Iran under the Additional Protocol[17] and to conduct complementary accesses under the Additional Protocol to sites and other locations in Iran.

[16] GOV/2016/46, para. 18.
[17] GOV/2016/46, para. 21.

22. During this reporting period, the Agency has not attended meetings of the Procurement Working Group of the Joint Commission (JCPOA, Annex IV — Joint Commission, para. 6.4.6).

## F. Summary

23. The Agency continues to verify the non-diversion of declared nuclear material at the nuclear facilities and locations outside facilities where nuclear material is customarily used (LOFs) declared by Iran under its Safeguards Agreement. Evaluations regarding the absence of undeclared nuclear material and activities for Iran remained ongoing.

24. Since Implementation Day, the Agency has been verifying and monitoring the implementation by Iran of its nuclear-related commitments under the JCPOA.

25. The Director General will continue to report as appropriate.